SWOT Hydrology Virtual Mission, September 22, 2010

Meeting at Paris CNES HQ,

This meeting focused on the SWOT Virtual Mission activities.

Wednesday September 22, 2010

Welcome, Introductions, SWOT Goals for 2010-2015

Nelly Mognard, Doug Alsdorf

Session 1, VM Presentations of Q and ΔS

River Hydraulics and Water Body Classification, *Tamlin Pavelsky*
SWOT Storage Change Accuracy, *C.K. Shum*
Instantaneous Discharge Algorithms, *Mike Durand*

Session 2, Presentations on Modeling and Data Assimilation

Data Assimilation for Discharge, Ob River example, *Sylvain Biancamaria*
Data Assimilation for Local and Basin Wide Discharge, *Kostas Andreadis*
Hydrodynamic Modeling, *Paul Bates*
Hydrologic Modeling, *Aaron Boone*
Amazon hydrologic modeling, *Walter Collischonn*

Session 3, Field Campaigns for Accomplishing the Goals

AirSWOT Technology and Campaign Logistics, *Delwyn Moller*
Complementary Airborne Acquisitions and Emulation of KaRIn Data, *Roger Fjortoft*
How to Calibrate and Validate SWOT, *Stephane Calmant*
Cal-Val on the lower Seine River, *Benoit Laignel*

Session 4, Modeling Approaches for Accomplishing the Goals

Present Status and What is Needed for Hydrodynamic Models, *Paul Bates*
Present Status and What is Needed for Hydrologic Models, *Aaron Boone*
Present Status and What is Needed for Community Models, *Jay Famiglietti*
Funding perspectives from NASA, *Jared Entin*
Funding perspectives from CNES, *Selma Cherchali*

Meeting at Paris CNES HQ, Thursday and Friday, September 23-24, 2010

This meeting is focused on developing the mission agenda and implementation plans from now until launch in 2020.

Thursday, September 23rd

Welcome, Introductions

Doug Alsdorf, Lee Fu, Nelly Mognard, Rosemary Morrow

A Brief History of SWOT, *Lee Fu*
Decisions needed by end of meeting, *Doug Alsdorf*

Session 1, Mission Status: Programmatics and Technology

Mission Status at CNES, *Selma Cherchali*

Mission Status at NASA HQ, *Eric Lindstrom*
Project Status at CNES, *Thierry Lafon*
Project Status at NASA JPL, *Parag Vaze*
Status of SWOT Technology at CNES, *Alain Mallet*
Status of SWOT Technology at JPL, *Ernesto Rodriguez*

Session 2, Status of Oceanographic Science and Algorithms

Ocean internal tide modeling and correction, *Brian Arbic*
Ocean wet tropospheric correction, *Shannon Brown*
Tropospheric corrections over the KaRIN swath, *Estelle Obligis*
Coastal tide modeling and corrections, *Florent Lyard*
Upper ocean circulation from SQG theory, *Patrice Klein*
Onboard processing for ocean data, *Dani Esteban-Fernandez*

Session 3, Status of Hydrologic Science and Algorithms

Summary of virtual mission meeting, *Sylvain Biancamaria*
Storage change science and algorithms, *Sylvain Biancamaria*
Discharge science and algorithms, *Mike Durand*
Data assimilation, *Kostas Andreadis*
Measurement principle and high resolution processing overview, *Roger Fjortoft*

Session 4, Discussion of SWOT Short and Longterm Goals

Hydrologic Science Goals, *Doug Alsdorf, Nelly Mognard*
Oceanographic Science Goals, *Rosemary Morrow, Lee Fu*
Technology Goals, *Ernesto Rodriguez, Alain Mallet*

Friday, September 24th

Summary of First Day & Overarching Actions for Accomplishing Goals

Doug Alsdorf, Lee Fu, Nelly Mognard, Rosemary Morrow will summarize the first day of the meeting and introduce overarching actions for accomplishing goals

Review of Mission Requirements Document, *Doug Alsdorf*
Mission project team compared to science definition team, *Thierry Lafon, Parag Vaze*

Session 5, AirSWOT

AirSWOT, *Ernesto Rodriguez* (20 minutes)
The uniqueness of AirSWOT measurements, *Delwyn Moller* (20 minutes)
Discussion Points: *Stéphane Calmant will lead the discussion* (30 minutes)
- How to validate SWOT and AirSWOT measurements?
- Where should AirSWOT fly?
- Cal-Val targets, same as fast-phase targets?
- Opportunities for collaborations

Session 6, Science Definition Team and Mission Project Team

What previous altimetry missions have done, *Lee Fu* (10 minutes)
Lessons from GRACE, *Jay Famiglietti* (20 minutes)
Discussion Points: *Doug Alsdorf and Rosemary Morrow will lead the discussion*
- SDT = Algorithms, MPT = Implementation?

How to expand SWOT participation
Correcting for water vapor, *Estelle Obligis, Shannon Brown*
Geoid and related errors, *Stéphane Calmant*
Global framework of tide models, *Florent Lyard*
Ocean surface waves, *Bertrand Chaperon*
Estuaries and bathymetry, *Florent Lyard, Jean-François Crétaux*
River, sea, and glacier ice, *Roger Fjortoft*
SST, passive tracers, and SSH, *Bertrand Chaperon*
Floodplain DEM, *Frédérique Seyler*

Session 7, Additional Actions to Accomplish Goals

Hydrologic model framework, *Dennis Lettenmaier*
Oceanographic model framework, *Jacques Verron*

Session 8, Timeline and Summary

The 2010-2015 Timeline and Beyond, *Doug Alsdorf*
Discussion of Timeline, *Doug Alsdorf*
Summary of Decisions and Discussion, *Doug Alsdorf*